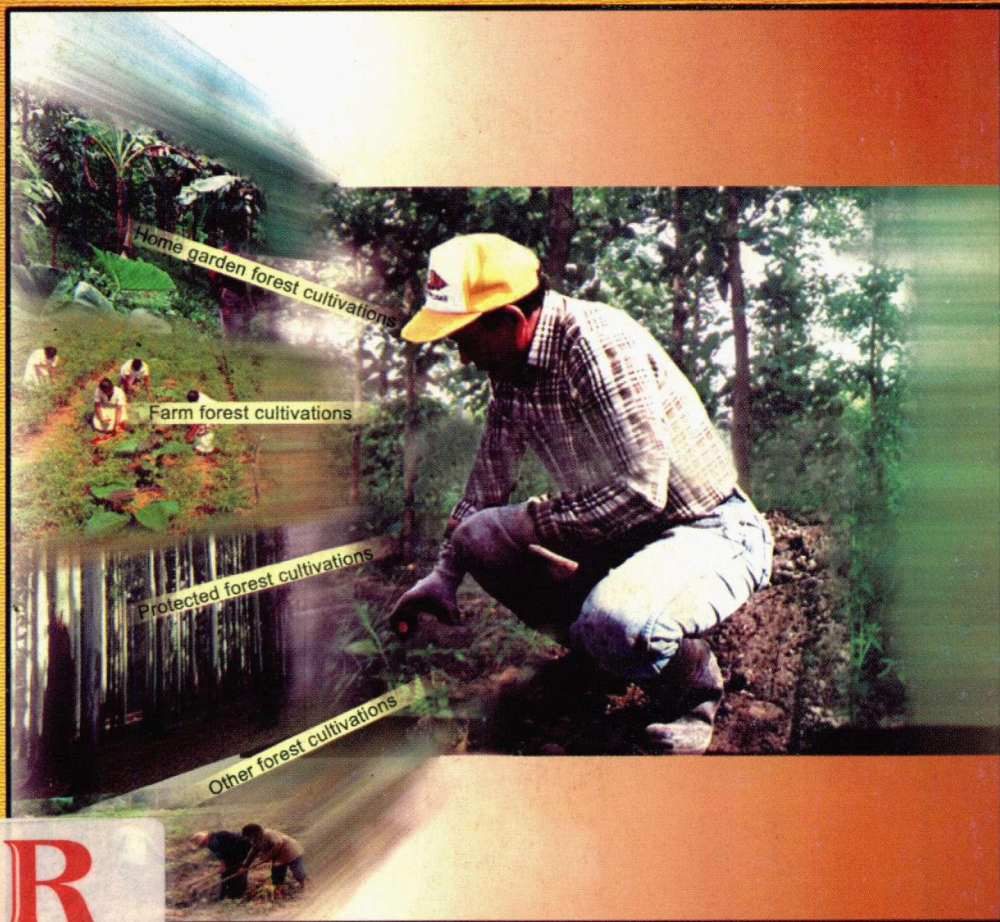


Forest Management in Sri Lanka

(Related to Fact Sheet No. 6)



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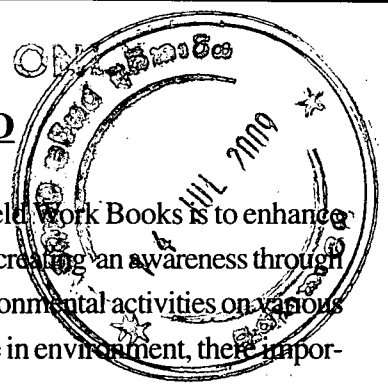
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Central Environmental Authority

Funded by : Forest Resources Management Project

FOREWORD

The objective of introducing this Field Work Books is to enhance knowledge on environment among students by creating an awareness through practical experiences gained by means of environmental activities on various environmental components and their existence in environment, their importance and the present conditions.

There are seven (07) such Field Work Books compiled on that basis through which an understanding could be had about environmental aspects connected to forests through students activities, accompanied with a Fact Sheet relating to each of the Field Books. By referring to the basic data and information given in the Fact Sheet, students will be able to have a basic understanding of the relationship between forests and the components which is described (e.g. forests and water) through the activities included therein.

It is expected to use the Fact Sheets and the Field Work Books to improve knowledge on the subject of forestry. The role on the part of students will be to use this Field Work Book as a basis on which they can be conscious of various environmental aspects in the light of the new knowledge; to think deep on the subject, on the basis of the Fact Sheet and to focus on the activities referred to.

This Field Work Book has been prepared for the environmental pioneer students in Year 06 to 13 and it has been designed to enable the completion of every activity within a period of one year.

Instructions which are necessary to carry out the activities are given along with the respective activities. While the activities are designed in such a manner that they can be carried out (to the maximum) in relation to one's environment, it is our expectation to perfect this Field Work Book in the

future by taking note of the short comings and difficulties that may arise in the implementation and to rectify them. Therefore, we are pleased to request you that such problems faced in the practical use may be intimated to the address given below.

It is further informed that you may obtain the assistance of the Divisional Environmental Officers and the Range Forest Officers in conducting these activities.

These Field Work Books were tested under a pilot project during 2002 - 2003 and every Divisional Environmental Officer was issued with a set of books on an experimental basis. However, it noted that their response in this regard was not very encouraging.

We extend our thanks to the members of the steering committee, Mr. Tilak Hewawasam the (then) chairman of the Central Environmental Authority, Prof. Sarath Kotagama, University of Colombo, Mr. W. R. M. S. Wickremasinghe, Additional Secretary, Ministry of Environment and Natural Resources and Mr. W. Rajapakse, Commissioner, Education Publication Ministry of Education for their services rendered as members of the Steering Committee and staff of the Central Environmental Authority, resources persons who contributed for the preparation of these Field Work books.

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Introduction

This Field Work Book titled “Forests Management” will guide environmental Pioneer students towards the activities related to them.

Since the Field Work Book has to be used with some knowledge of the scientific background, it is necessary to obtain the assistance of a science teacher of the school.

It is expected to use of the Field Work Book to create an awareness among the students by directing them towards five (5) selected practical environmental activities; to improve their knowledge of the environment and to focus their thinking towards such activities. It is further expected to enhance the ability of students to come to conclusions by observing and studying environmental phenomena and also to improve their exploratory skills on environmental matters.

Therefore, we request all those concerned that their maximum contribution be extended in order to realize the above benefits by performing the activities contained in this work book in achieving the expected objectives.

Further we expect to improve this activity which has been launched as a pilot project to be implemented among school children and therefore the views and suggestions of all group members and teachers who provide the necessary guidance in this regard are highly appreciated.

Field activities relating to forest management

Activity - 01

A field tour for the study of the productivity of a community participatory forest cultivation

Expected Objectives

1. To identify the strategies adopted to motivate the people of the area for the community forest cultivation project.
2. To inquire as to whether the unauthorised felling of trees has ceased after community forest cultivations are established.
3. To identify facilities for the cultivation of income earning perennial crops with the cultivation of forests and for marketing of such products..
4. To understand what subsidies were received by the village community participating in the project and how they were consumed.
5. To compare the income levels of participating families before and after the establishment of community forest cultivations.
6. To identify the importance of the participation of rural community in increasing the timber and fire wood production in the country and environment conservation.
7. To identify the post maintenance activities in a community forest cultivation.

Instructions for activities

For teachers

1. Select from a convenient area, community forest cultivations which are in active conditions for the Environment Pioneer Groups to have field study activities.
(Inquiries in this regard can be made from the following address. Director Educaiton and Forest Extension Division, Department of Forest Conser vation, Battaramulla. Tele : 01-2866626).
2. Make necessary arrangements to have the assistance of an officer of the District Forest Officer's Office of the area concerned in order to obtain assistance for the knowledge and survey activities of the Pioneer Group and the necessary facilities for the realization of the objectives of the field tour.
3. Guide the Pioneer Group in the preparation of the activity papers and questionnaires in order to realize the expected objectives.
4. Give instructions to secure the necessary equipment for taking photographs of the areas required, if there are such facilities.
5. Assist the students to prepare a work plan showing the daily progress of work, having allocated each function to the groups.
6. Educate the students on how to behave in the field.

Instructions for Students.

1. Use a suitable book to record the various information collected during field activities.

2. Ask the officer who has come to assist you about the places to be visited for your survey activities and the persons for information to be met.
3. Call at the scheduled sites to engage in the activities assigned to the respective groups.
4. Discuss with the relevant persons the various obstacles faced in the establishment of the community participatory forest cultivation and how they were overcome, and report.
5. Identify the past and present situations of environmental damage caused by unauthorised felling of timber in the area, from the persons concerned and the observations, and report.
6. Meet the persons who have participated in the Project and inquire about their income levels before and after their involvement in the project; obtain their views of the project and report.
7. Make inquiries with regard to the institutes which have provided aid for the project, whether such aid is adequate or inadequate, for which purpose it was utilized etc. and report along with the views of your group.
8. Obtain through discussions and observations, an understanding of the various post maintenance activities in running a community participatory forest cultivation by visiting the sites with the relevant persons and report all such information with illustrations.

Make available to other groups also, the information collected by each group.

Prepare a leaflet on the basis of your experience in order to educate the other students of the school on the sub project you studied under the community participatory forest cultivation programme.

or

Prepare a leaflet describing how a forest cultivation should be maintained in order to obtain high quality timber.

Evaluation of activities and assignment of marks.

1. Preparedness
2. Being engaged in the relevant activities as groups.
3. Relevance of the information collected
4. Finish (orderliness of reports.)

Total marks - 20 with 5 marks for each criterion.

Activity - 02

Development of home gardens by the use of hedges and live intercropping system.

Objectives

1. To identify as a system which provides the family requirements from the home garden.
2. To identify as a system capable of minimizing the damage caused to natural forests, at least in a small way.
3. To understand as a system which can increase the productivity of home gardens of the members of the Environmental Pioneers Group.
4. To identify as a system where the elderly can help earn an additional income from the home garden.

5. To understand that it is a system that can be used for soil conservation in a home garden.

Instructions for Activities

For teachers

1. Identify a home garden of a Pioneer Group member for the Pilot Programme.
2. Get the land owner's permission for the project.
3. Decide the suitable time for the activity and prepare an operational work plan after examining the selected land with the Pioneer Group.
4. If special instructions are required, inquire from the office of the District Range Forest Office of the area or the following address.

Deputy Conservator of Forests.
Department of Forest Conservation
Battaramulla
Telephone Number : 01-2866626

5. Secure the required number of suitable plants for cultivation in the area as fire wood.
6. Implement the Project in such a manner that it does not affect the other subjects of the school. Facilities can also be obtained to implement this project in respect of the skills subject activities of the school curriculum.

7. Create an awareness among the students to act in a disciplined manner in the implementation of the project.
8. Photograph the site before the commencement of the project, at the time it is functioning and when crops are established after cultivation work is over.

Instructions to Students

1. Ensure that you behave in a disciplined manner when engaged in the activities.
2. Understand the action plan thoroughly.
3. Divide into groups and work in order to complete the field activities efficiently.
4. Observe the site which is prepared, at convenient times. If problems arise, take action to find suitable solutions.
5. Participate as groups under a systematic plan, in the post maintenance activities of the cultivation.

Evaluation

1. Preparedness for activities.
2. Performance of the responsibilities, assigned, properly.
3. Acting in co-operation with others.
4. Attention paid to the safety of others while being engaged in the activities.
5. Handing over the implements used, after cleaning them.

Total marks 20 with 4 marks for each criterion.

Activitiy - 03

Establishment of a model protected forest cultivation.

Objectives :

1. To identify the fact that it is possible to rehabilitate an unproductive land subjected to soil erosion, by protected forest cultivation.
2. To assume that felling the trees in natural forests can be prevented by utilizing a barren land for timber or fire wood production.
3. To demonstrate to the community, the productibility of a protected forest cultivation.

Instructions to teacher for activities.

1. Select a land belonging to the state or a religious institute, for this purpose.
2. Make the students well aware of the objectives of the activity.
3. Assist the Environmental Pioneer Group so that they can prepare a work plan enabling them to engage in the relevant activities on school holidays.
4. Make the Pioneer group aware of the use of the double hedge system for soil consrvation on the land, through an officer of the District Range Forest Office.

Direct the Pioneer Group to further study the leaflet issued by the Department of Forest Conservation on the double hedge system to have additional information on the subject.

5. Obtain assistance from the District Range Forest Officer's office in order to select the types of plants suitable for cultivation on the land.

Instructions to the Environment Pioneer Group

1. Prepare an action plan for the project with the assistance of the teacher.
2. Prepare double hedges for soil conservation on the land.
3. Prepare holes with standard gaps for the planting of trees made available for timber or firewood.
4. Place the plants after removing the polythene containers correctly.
5. Ensure the uninterrupted maintenance of the forest cultivation and the dual hedges.
6. Assist whenever possible, to demonstrate the productivity of the protected forest cultivation.

Evaluation

1. Collective action
2. Following instructions correctly.
3. Assisting the teachers for the management of the cultivation.
4. Assisting to persuade the public with regard to the cultivation system.

Total marks 20 with 5 marks for each criterion.

Activity - 04

Tree planting to increase the plant cover in a place selected under miscellaneous forest cultivation.

Objective

1. Identify the necessity to improve the plant cover in a selected site.
2. Come forward to bequeath to the community, plants that can be used as timber or firewood.

3. Identify the fact that it is suitable to plant fast growing trees to meet timber and firewood requirements.
4. Plan for the prevention of deforestation through tree planting.

Instructions to teachers for activities

1. Select the school garden or the premises of a religious place for this activity.
2. Make arrangements to obtain fast growing plants suitable for timber or firewood from the District Range Forest Office.
3. Make the students well aware of the objectives of the activity.
4. Fix the suitable date for tree planting and find the necessary equipments.
5. Decide the places for planting trees and the number of trees required in view of the space required for the growth of the trees in future.
6. Make the students well aware of the maintenance activities required once the trees are planted.
7. Plant the trees on the due dates and entrust their maintenance to the Environmental Pioneer Groups.
8. Pay attention to the possibility of arranging such activities to coincide with the subject activities of life skills.

Activity - 05

A field tour for a simple study of a forest cultivation.

Expected Objectives

1. Understand the reasons for the use of exotic plants for forest cultivations.

2. Observe that plant leaves on the soil decay quickly / take some time to decay.
3. State that there is a tree canopy in the forest cultivation which is capable of preventing soil erosion.
4. Identify reasons for the absence of an undergrowth in the forest cultivation if there is no such undergrowth.
5. Observe that trees are planted at regular intervals in the forest cultivation.
6. Measure the space between the trees and calculate the number of trees that can be planted per acre / hectare.
7. Identify that the trees have straight trunks with no branches grown down the trunks and the absence of abnormally grown trunks which is a special feature.
8. Measure with the use of a clinometer, the height of the trees selected at random in the forest cultivation.
9. Measure the growth of trees selected at random, at a convenient height, in order to calculate the volume of timber of tree and estimate its value.
10. Calculate the potential income per acre / hectare of forest cultivation.
11. Examine during the inspection tour whether there are places subjected to erosion and to see whether there are non-timber forest products within the area observed.
12. Understand that since the forest cultivations are properly maintained with fast growing trees being planted, it helps prevent the felling of trees in natural forests.

Instructions to teachers for implementation

1. Obtain information on an easily accessible forest cultivation for the field tour and the permission from the office of the District Range Forest Officer of the area.
2. Make arrangements for the participation of an office of that office to assist the Environmental Pioneer Group on the field tour in its study activities.
3. Make the students well aware of the expected objectives and prepare action papers giving information on the activities to be performed during the field visit.
4. Divide the students into suitable groups to enable the completion of the observation activities easily and on time and educate them on the manner of behaviour.
5. Give instructions to obtain the prices of a cubic metre of timber available in the forest cultivation visited for observation, from a timber depot of the State Timber Corporation and a private timber dealer.
6. Find a Table used for the cultivation of values of timber logs.
7. If there is facility obtain a camera to take the necessary photographs, a thermometer, a hydrometer and a measuring tape.

Instruct the students to make a tension indicator to measure the height of trees (Obtain the necessary instructions from a Mathematics teacher or from the Grade 9 Mathematics teachers Hand Book.

Instruction to students

1. Before entering the forest cultivation, measure and note down the environmental temperature and humidity.
Entrust this responsibility to one member of the group.

2. Do not go away from the area earmarked for your observation.
3. Bring the problems you face during the observation, to the notice of the officer who has come to assist you and obtain solutions and instructions from him.
4. Inquire the reasons for the use of this land for forest cultivation and the reasons for selecting the particular plants for the cultivation.
Identify the difference between the ownership of timber in a community participatory forest and that of a forest cultivation of this type.
5. Observe the conditions created within the forest cultivation for the conservation of water and soil and report.
6. Observe whether the plant residues collected on the soil show signs of quick disintegration and report.
7. Has an undergrowth been created in the forest cultivation ? If not, ask the officer who has come to assist you, the reason for that.
8. Examine whether there are bee colonies in the forest cultivation environment and if not so, identify the scientific reasons for that.
9. Measure the interval between the timber plants cultivated in the forest cultivation and calculate the land space required for the maximum growth of a tree. Thus, calculate the number of trees that can be planted per acre / hectare.
10. Examine the scientific reasons for the existence of straight trunks in trees grown in forest cultivations and the reason for the lack of branches down the trunk.
11. Measure the height of the trees by using a clinometer and the girth at a convenient height using a tape. Use a few trees selected at random for this purpose.

12. Calculate the value of a tree and that of the trees in an acre / hectare with the help of the Table supplied to you.
13. Obtain the following information from the villagers around the forest cultivaiton.
 - i. Climatic condition before the start of the forest cultivation and the situation after the development of the cultivation.
 - ii. Particulars with regard to any change in the water level of wells, ponds, etc. and the scientific reasons for such changes.
14. Prepare an article based on information gathered by you during the field visit on the necessity of replanting of forests on lands which have become unproductive due to deforestation, to create awareness among the other students of the school.

Evaluation

Criteria and assignment of marks

1. Pre - arrangment
2. Co-operative work during the process.
3. Discharging one's responsibility properly.
4. Collection of information and duly reporting.
5. Preparing an article on the basis of the information collected.

Total marks 20 with 4 marks each.

Activity - 06

Maintaining a nursery project for timber plant production.

Objectives

1. To provide continuous supply of plants for the forest cultivation.
2. To impart scientific knowledge of the maintenance of a timber plant nursery to Environmental Pioneer Groups.
3. To have students' leisure time spent on a useful activity.
4. To introduce timber nurseries as an enterprise which enables the earning of an additional income while contributing to environment conservation.

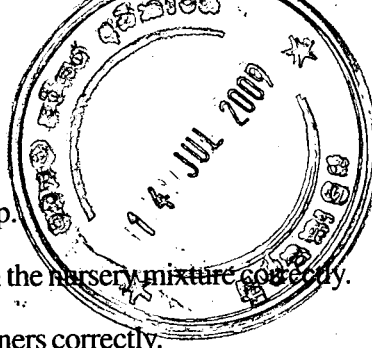
Instructions to teachers for implementation

1. Create awareness among the Pioneer Group members who participate in the activity, through a Range Forest Officer of the Forest Department.
2. Enter into relevant contracts for the supply of plants to the Forest Department.
3. Select a place with good drainage and which is suitable for irrigation, for the nursery.
4. Take steps to obtain planting materials at required times.
5. Direct the students to prepare the nursery potting medium according to the instructions received.
6. Fill the nursery pots correctly, plant the seeds and plants and have them placed in proper places.
7. Direct students to prepare and follow a cultivation calendar for the post maintenance activities of the nursery project and its continuous existence.
8. Pay attention to use the money received from the sale of plants, effectively.

Instructions to the Students (Environmental Pioneer Group)

1. Fill the nursery pots provided to you, correctly with the planting medium.
2. Plant in the containers the planting material made available to you or those of high quality prepared according to the instructions given to you.
3. Keep the containers with the plants in a shade for about a week and make them accustomed to the sunlight gradually.
4. Engage in the post caring activities of the nursery according to the cultivation calendar provided to you.
5. Produce compost fertilizer as an additional activity for the preparation of planting media, in order to maintain your nursery continuously.
6. Keep plants of various age groups in the nursery so that plants can be issued from time to time.
7. Maintain records on the number of plants in the nursery, the dates on which they were planted, the number of plants withered away and the number of plants issued etc.
8. Engage in the post maintenance activities during school holidays according to the calendar provided by your teacher.
9. Pay attention to maintain correct reports on the income and expenditure of the nursery.

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Evaluation

1. Collective action as a group.
2. Filling the receptacles with the nursery mixture correctly.
3. Planting trees in the containers correctly.
4. Continuous engagement in post nursing activities.
5. Maintaining reports on nurseries on the continuous basis.

Total marks 20 with 4 marks each.

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Published by : Central Environmental Authority
(Environmental Education & Awareness Division)
'Parisara Piyasa'
104, Denzil Kobbekaduwa Mawatha,
Battaramulla.

October 2004